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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,202	10/20/2003	Kohji Murayama	JP920010391US1	4460
32074	7590	05/18/2007	EXAMINER	
INTERNATIONAL BUSINESS MACHINES CORPORATION			CANNING, ANTHONY J	
DEPT. 18G			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/689,202	MURAYAMA ET AL.	
	Examiner	Art Unit	
	Anthony J. Canning	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 March 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 and 10-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Acknowledgement of Amendment

1. The amendment to the instant application was received and entered on 5 March 2007.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Aziz et al. (U.S. 2002/0135296 A1).

4. Regarding claim 1, Aziz et al. disclose an organic electroluminescent device (paragraph 0010, lines 1-3), including: a substrate (see Fig. 3, item 31; paragraph 0066, lines 7-8); electrodes including a first electrode (see Fig. 3, item 38; paragraph 0066, lines 8-9) formed on the substrate, and a second electrode (see Fig. 3, item 32; paragraph 0066, line 20) disposed to be spaced from the first electrode (see Fig. 3, all items between 32 and 38); a function layer formed between the electrodes, the function layer including a carrier injection layer, a carrier transport layer and a luminous layer (see Fig. 3, item 35; paragraph 0066, lines 11-14); and a buffer layer (see Fig. 3, item 34; paragraph 0064; paragraph 0066, lines 15-16) in contact with the second electrode (see

Fig. 3, items 32 and 34; paragraph 0066, item 34, the buffer layer, is in direct contact with item 32, the second electrode) and disposed to be spaced between the second electrode and a protective film layer (paragraph 0042, page 5, lines 23-30; the cathode is what the examiner refers to as the first electrode, the cathode has a thermal protective layer thereon, therefore the buffer layer is between the second electrode and a protective layer).

5. Regarding claim 2, Aziz et al. disclose the organic electroluminescent device according to claim 1, wherein the buffer layer is formed in a distance of 20 nm or less from an upper end surface of the function layer (paragraph 0042, lines 65-67). The region (see Fig. 3, item 33, not including item 34) between the buffer layer (see Fig. 3, item 34) and the function layer (see Fig. 3, item 35) can be any thickness between 5 and 500 nm, the lower end of that range falls within the limitation of 20 nm or less.

6. Regarding claim 3, Aziz et al. disclose the organic electroluminescent device according to claim 1, wherein the buffer layer contains an oxide (paragraph 0042, lines 122-123).

7. Regarding claim 4, Aziz et al. disclose the organic electroluminescent device according to claim 1, wherein the buffer layer contains aluminum oxide (paragraph 0042, lines 122-123). Aziz et al. teach that the buffer layer can be made from a metal oxide, which encompasses all metal oxides, including aluminum oxide.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aziz et al. (U.S. 2002/0135296 A1) in view of Arai (U.S. 5,969,474).

10. Regarding claim 10, Aziz et al. disclose an organic electroluminescent display apparatus including a plurality of organic electroluminescent devices (paragraph 0010, lines 8-10; paragraph 0066, lines 1-3) formed on a substrate (see Fig. 3, item 31; paragraph 0066, lines 7-8), wherein the organic electroluminescent device includes: electrodes including a first electrode adjacent to the substrate (see Fig. 3, items 31 and 38; paragraph 0066, lines 8-9) and a second electrode disposed to be spaced from the first electrode (see Fig. 3, item 38; paragraph 0066, line 20), the second electrode includes an upper electrode layer and a lower electrode layer (paragraph 0074, lines 15-17, layers of conductive carbon or conjugated polymers are interpreted by the examiner to be upper and lower layers of the electrode); a function layer (see Fig. 3, item 35; paragraph 0066, lines 11-14) formed between the electrodes (see Fig. 3, items 32, 35, and 38), the function layer including a carrier injection layer, a carrier transport layer and a luminous layer (see Fig. 3, item 35; paragraph 0066, lines 13-14; specifically the electron injection layer, the hole carrier transport layer and the luminous layer); and a buffer layer (see Fig. 3, item 34; paragraph 0064; paragraph 0066, lines 15-16) in contact with the second electrode

and disposed between the upper electrode and the lower electrode (see Fig. 3, items between 32, 34 and 38). Aziz fail to disclose that the buffer layer is disposed between the upper electrode layer and the lower electrode layer of the second electrode.

In the same field of endeavor, Arai discloses an organic electroluminescent device (see Fig. 1; column 2, lines 36-37), including an electrode (see Fig. 1, items 25 and 26; column 3, lines 51-58) with an upper layer (see Fig. 1, item 26; column 3, lines 51-58) and lower layer (see Fig. 1, item 25; column 3, lines 51-58), with a buffer layer (column 3, lines 44-50) therebetween. Arai further discloses that the buffer layer prevents the lower electrode layer from being oxidized by interfacial reaction between the two electrode layers.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent device of Aziz et al. to include that the buffer is formed between the upper and lower electrode layers of the second electrode, as taught by Arai, to prevent oxidization of the upper layer.

11. Regarding claim 11, Aziz et al. and Arai disclose the organic electroluminescent display apparatus according to claim 10. Aziz et al. further disclose that the buffer layer is formed in a distance of 20 nm or less from an upper end surface of the function layer (paragraph 0042, lines 65-67). The region (see Fig. 1, item 13, not including item 14) between the buffer layer (see Fig. 1, item 14) and the function layer (see Fig. 1, item 15) can be any thickness between 5 and 500 nm, the lower end of that range falls within the limitation of 20 nm or less.

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12. Regarding claim 12, Aziz et al. and Arai disclose the organic electroluminescent display apparatus according to claim 10. Arai further disclose that the buffer layer contains an oxide (paragraph 0042, lines 122-123).

13. Regarding claim 13, Aziz et al. and Arai disclose the organic electroluminescent display apparatus according to claim 10. Aziz et al. further disclose that the buffer layer contains aluminum oxide (paragraph 0042, lines 122-123). Aziz et al. teach that the buffer layer can be made from a metal oxide, which encompasses all metal oxides, including aluminum oxide.

14. Regarding claim 14, Aziz et al. and Arai disclose the organic electroluminescent device according to claim 10. Aziz further discloses: a thin layer (see Fig. 4, item 47; paragraph 0067, line 8) disposed contiguously to the function layer (see Fig. 4, items 45 and 46; paragraph 0067, lines 17-21) and containing any of an alkaline metal element and an alkaline earth metal element (paragraph 0042, lines 132-134). Although Aziz et al. does disclose that the thin layer can be thinner than 20 nm (paragraph 0092), Aziz et al. fails to specifically disclose that the thin layer is approximately 0.5 nm. However, to establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 107 (CCPA 1960). An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a *prima facie* case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). “A comparison of the *claimed* invention with the disclosure of each cited reference to determine the number of claim limitations in common with each reference, bearing in mind the relative importance of particular

limitations, will usually yield the closest single prior art reference.” *In re Merchant*, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978) (emphasis in original). Where the comparison is not identical with the reference disclosure, deviations therefrom should be explained, *In re Finley*, 174 F.2d 130, 81 USPQ 383 (CCPA 1949), and if not explained should be noted and evaluated, and if significant, explanation should be required. *In re Armstrong*, 280 F.2d 132, 126 USPQ 281 (CCPA 1960) (deviations from example were inconsequential).

15. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aziz et al. (U.S. 2002/0135296 A1).

16. Regarding claim 5, Aziz et al. disclose the organic electroluminescent device according to claim 1. Aziz further discloses: a thin layer (see Fig. 4, item 47; paragraph 0067, line 8) disposed contiguously to the function layer (see Fig. 4, items 45 and 46; paragraph 0067, lines 17-21) and containing any of an alkaline metal element and an alkaline earth metal element (paragraph 0042, lines 132-134). Although Aziz et al. does disclose that the thin layer can be thinner than 20 nm (paragraph 0092), Aziz et al. fails to specifically disclose that the thin layer is approximately 0.5 nm. However, to establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 107 (CCPA 1960). An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a *prima facie* case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). “A comparison of the *claimed* invention with

the disclosure of each cited reference to determine the number of claim limitations in common with each reference, bearing in mind the relative importance of particular limitations, will usually yield the closest single prior art reference.” *In re Merchant*, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978) (emphasis in original). Where the comparison is not identical with the reference disclosure, deviations therefrom should be explained, *In re Finley*, 174 F.2d 130, 81 USPQ 383 (CCPA 1949), and if not explained should be noted and evaluated, and if significant, explanation should be required. *In re Armstrong*, 280 F.2d 132, 126 USPQ 281 (CCPA 1960) (deviations from example were inconsequential).

Response to Arguments

17. Regarding the applicant’s argument that the protective film of Aziz et al. is positioned on the substrate farthest from the second electrode, the examiner notes that there is no structural limitation in claims 1 and 10 about where the protective film is in relation to the second electrode other than the buffer layer is between the protective film and the second electrode.

18. Applicant’s arguments, see Remarks, filed 5 March 2007, with respect to the rejection(s) of claim(s) 10-14 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Arai (U.S. 5,969,474).

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Contact Information

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning
Patent Examiner
Art Unit 2879
1 May 2007

Kgnkaray
5/10/07